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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/624,133	07/21/2003	Theodore W. Rogers	34741-872	8021

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EXAMINER

KRAMER, DEAN J

ART UNIT PAPER NUMBER

3652

DATE MAILED: 11/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/624,133

Applicant(s)

ROGERS ET AL.

Examiner

Dean J. Kramer

Art Unit

3652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 October 2006.
- 2a) ☒ This action is **FINAL**.      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3-5,7,8 and 17-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-5 and 17-21 is/are rejected.
- 7) ☒ Claim(s) 7,8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

The amendment filed October 10, 2006 and the remarks presented therewith have been carefully considered. However, they are not deemed to be fully persuasive.

#### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3, 17, 18, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thomas et al. (6,116,848) in view of Donde et al. (5,788,453).

The patent to Thomas et al. shows an end effector comprising a wafer blade (14), a pair of arm assemblies (34) including contact pads (48), means (38,50) for moving the pads, and a real-time force feedback system (56,58) capable of dynamically adjusting the force exerted on a wafer while being gripped between the contact pads (48). The Thomas et al. real-time force feedback system is not specifically disclosed as generating a signal representative of the actual amount of force being exerted by the contact pads on an edge of a wafer.

However, the Donde et al. patent shows a wafer gripping device having piezoelectric gripping pads with force sensing means incorporated in each pad.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a force sensing means on the grippers of the

Thomas et al. end effector as taught by Donde et al. so that differently sized wafers could be securely held but not damaged by the moveable gripper arms. It is pointed out that the Donde et al. device generates a signal while it "measurably engages the wafer". The subsequent adjustment of force can be considered dynamic in that it continuously changes until it reaches the desired force, predetermined or otherwise. In regard to claims 20 and 21, it would have been an obvious matter of design choice to use any well known force sensor, such as a load cell or strain gauge, as is commonly used in the robotics art especially since applicant has not specifically disclosed that this particular type of force sensor solves any stated problem or is for any critical purpose.

3. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Thomas et al. in view of Donde et al. as applied to claims 1, 3, 17, 18, 20, and 21 above, and further in view of Fossey et al. (5,988,971).

Fossey et al. shows a wafer handling blade including a plurality of capacitance sensors (61,62) for detecting the presence of a wafer without actually contacting the wafer.

It would have been obvious to a person having ordinary skill in the art to provide the modified Thomas et al. device, presented supra, with capacitance sensors similar to those shown in the Fossey et al. patent in order to properly orient the resulting gripper arms with respect to a wafer without have to first contact the wafer and possibly damage its surface.

4. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thomas et al. in view of Donde et al. as applied to claims 1, 3, 17, 18, 20, and 21 above, and further in view of Bacchi et al. (6,256,555).

The Bacchi et al. patent shows a wafer handling blade with thru-beam optical sensors (80,82) for accurately detecting the edge of a wafer.

It would have been obvious to one of ordinary skill in the art to provide edge sensors similar to those shown in the Bacchi et al. patent on the contact pads of the modified Thomas et al. device as an effective means of sensing the edge of a wafer.

***Allowable Subject Matter***

5. Claims 7 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dean J. Kramer whose telephone number is (571) 272-6926. The examiner can normally be reached on Mon., Tues., Thurs., Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eileen Lillis can be reached on (571) 272-6928. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Dean J Kramer  
Primary Examiner  
Art Unit 3652

djk  
11/7/06